

ABSTRACT

The present invention provides a system and method for creating virtualized storage in a storage area network using distributed table-driven input/output mapping. The present invention distributes the virtualization mapping in multiple parallel, mapping agents that are separate from a controller. This allows the performance-sensitive mapping process to be parallelized and distributed optimally for performance, while the control of the mapping may be located in a controller chosen for optimal cost, management, and other implementation practicalities. The mapping agents store the virtual mapping tables in volatile memory, substantially reducing the cost and complexity of implementing the mapping agents. The controller is responsible for persistent storage of mapping tables, thereby consolidating the costs and management for persistent mapping table storage in a single component. Distributed virtualization also allows the controller to manage multiple virtual disks used by multiple host systems, and allows a single virtual disk to be shared by multiple host systems. The mapping agents preferably do not interact only with other mapping agents, thereby improving the scalability of the virtual storage system and the virtual storage system's tolerance of component failures.